APPENDIX 5.2
Community Health and Safety Plan

COMMUNITY HEALTH AND SAFETY PLAN

Project: MISSION BAY LANDFILL **Job Number: 01203520.00**

SITE IDENTIFICATION

Site Location: Sea World Drive, South Shores of Mission Bay Park, San Diego, California
Thomas Guide page number: 1268, Grids C3, C4, D3, D4, E3, E4

A Site plan is attached to this Community Health and Safety Plan (Figure 1).

PROJECT SUMMARY

An assessment of the inactive 115-acre Mission Bay landfill located in the vicinity of Sea World drive will begin in April 2004. The purpose of this assessment is to calculate the levels of potential environmental toxicants. The assessment will also more clearly define the limits of the waste areas.

The Mission Bay landfill Technical Advisory Committee (TAC) was created in August 2002 to oversee the hiring of a consultant to perform the assessment and determine if further action is warranted on the landfill site. The TAC is chaired by Council member Frye, and consists of community members, regulatory agency staff and City employees. The consultant, SCS Engineers, is a nationally recognized expert in the solid waste industry. SCS has performed an extensive amount of historical research on the Mission Bay landfill site in order to prepare the Site Assessment Plan. A copy of the Site Assessment Plan is available for public review at the City of San Diego's Environmental Services Department Library located at 9601 Ridgehaven Court in San Diego.

The assessment will include several phases such as walking the site while performing geophysical surveys, and using a truck mounted hydraulic ram to obtain soil, gas, and water samples for laboratory analysis.

The final site assessment report will provide the needed information to evaluate the current conditions and what future remediation alternatives, if any, are most appropriate for the site.

If you have any questions related to the Mission Bay landfill site assessment, please call Ray Purtee, Senior Mechanical Engineer for the City of San Diego, at (858)-573-1208, or e-mail Rpurtee@sandiego.gov

INTRODUCTION

The investigation of the inactive Mission Bay Landfill will occur within a public area and potentially create hazards to the public and local community. The purpose of this document is to describe the potential hazards and control measures to be used by SCS Engineers during the environmental investigation of the inactive Mission Bay Landfill.

In general there are two types of potential hazards. The first type is *physical* hazards associated with the use of heavy equipment and vehicles, in many respects similar to those used for small construction projects. The second type is potential *chemical* hazards associated with the disturbance and excavation of landfill materials. These hazards are primarily related to potential chemical exposures, are subject to engineered controls during the investigation process, and typically limited to the immediate work area. Thse also include potential nuisance odors associated with the disturbance of the landfill. In both cases protective measures for the community include advance notification and access limitations so that community members do not encounter either physical or chemical hazards. Workers employed by SCS will also be working under a Site Worker Health and Safety Plan and will be responsible for implementing this Community Health and Safety Plan.

As stated in the Workplan prepared by SCS Engineers, "…Overall community health and safety issues will be submitted to the City of San Diego Local Enforcement Agency (LEA), the Regional Water Quality Control Board (RWQCB), and the City of San Diego (City) at least 10 working days prior to commencement of fieldwork. The primary community health and safety concerns for this Site are the accessibility of the landfill investigation equipment and vehicles to the general public, odors or the release of landfill gas (LFG) that may be generated during investigative procedures, and other hazards associated with field investigations."

PROJECT DESCRIPTION

The Site is located within Mission Bay Park, on the south shores of the park in San Diego, California (Figure 1). The Site is generally located in the southeast portion of Mission Bay Park. It is bound to the north by the waters of Mission Bay (Pacific Passage), to the west by Sea World Amusement Park, to the east by Interstate 5, and to the south by the channelized San Diego River Floodway. The site comprises approximately 115 acres of relatively flat topography and possesses the following physical features: most of the eastern portion of the site has exposed soil at the surface, most of the central portion of the Site is covered with asphalt, and includes Sea World Drive to the south, and areas to the west include exposed soil and a portion of the parking area used by Sea World.

BACKGROUND

The Site operated as a municipal landfill from 1952 to 1959; it received hydraulic fill from dredging of Mission Bay from 1959 to 1969, and additional fill in about 1980. As reported by Woodward-Clyde Consultants in 1983, the landfill ranges in thickness between 7 and 20 feet, with an average of 15 feet. It is reportedly overlain by 1.5 to 16 feet of hydraulic fill and imported fill soils, with an average thickness of 8 feet.

Wastes deposited at the Site are primarily municipal refuse, but it is also reported to have accepted hazardous wastes from local aerospace and industrial firms, and from the U.S. military.

CHEMICALS OF CONCERN

Overall, it is expected that some of the wastes in the landfill contain industrial chemicals, including metals, solvents, and industrial process residues that today are regulated as hazardous waste. Groundwater, surface water, soil, and sediments are reported to contain detectable concentrations of contaminants of potential concern (COPC). Of particular concern are reports of mercury, arsenic, thallium, lead, and chromium, and the detection of solvents including carbon tetrachloride, chloroform, bromoform, methylene chloride, diethyl ether, carbon disulfide, dichloroethene, vinyl chloride, phthalate compounds, and dichlorobenzene. Methyl tertiary butyl ether (MTBE) and gasoline components (benzene, toluene, xylene) have also been detected both in surface water and groundwater. Hydraulically downgradient, crossgradient, and upgradient wells are all affected, suggesting that the volatile organic compounds (VOCs) may have migrated in a gaseous phase without regard for groundwater flow direction.

Municipal solid waste (MSW) landfills typically contain gas mixtures generated from the natural decomposition of organic wastes and vapors from volatile compounds present in

the waste. VOCs are produced by biological processes, residual chemicals, or chemical reactions in the landfill. LFG, consisting primarily of methane and carbon dioxide (CO_2), is produced by the actions of micro-organisms in the landfill under anaerobic conditions. Initially decomposition is aerobic until the oxygen supply is exhausted. Anaerobic decomposition can produce high concentrations of CO_2 and methane. LFG typically consists of approximately 50 percent CO_2 by volume, 50 percent methane, and trace amounts of non-methane organic compounds (NMOCs). Other constituents of landfill gas can include ammonia, hydrogen sulfide, nitrogen, oxygen, and carbon monoxide, along with a variety of VOCs. Organic air emissions from landfills may include some toxic compounds and hazardous compounds with carcinogenic and non-carcinogenic health effects.

EVALUATION OF POTENTIAL PUBLIC EXPOSURE TO HAZARDS

A summary of the potential hazards, routes of exposure, and potential targets is presented in the table below. The duration of the hazard is also evaluated, and the proposed methods to prevent exposure are also given.

Potential Hazard	Duration of Hazard	Route of Exposure	Potential Target	Control Measures used to Prevent Exposure
Movement and use of field vehicles, drill rigs, or vehicular traffic hazards	Immediate	Movement of heavy equipment or vehicles. Collision with pedestrians or cars.	Pedestrians and vehicle within South Shores Park. Ground personnel working/involved with the investigation.	Use of exclusion zones around the work areas. Ground personnel will wear safety vests or equivalent. Traffic control measures implemented as necessary.
Landfill gas emissions	Short term	Migration through the air when the landfill cover is breached. Exposure of lungs and eyes.	Those working at the Site that are involved in the investigation. Those in the immediate vicinity of the Site.	Use of exclusion zone. Monitoring emissions downwind of investigation activities. Stopping investigative work if "ction levels are exceeded.
Generation of dust or vapors from drilling activities	Immediate	Dispersal by air. Exposure of lungs, eyes and skin to particulate matter.	Ground personnel and equipment operators working/involved with the investigation. Those in the immediate vicinity of the Site.	Monitoring of dust/vapor generation downwind of excavation.
Dermal contact with subsurface soil	Immediate	Those in the exclusion zone.	Ground personnel and equipment operators	Use of exclusion zones around the areas where asphalt is not present. Restriction of access to

Potential Hazard	Duration of Hazard	Route of Exposure	Potential Target	Control Measures used to Prevent Exposure
and water during invasive drilling and sampling.				to trained personnel only. Securing the excavation overnight. Use of signs, delineators, temporary fencing, and caution tape.

MONITORING EQUIPMENT AND PROTOCOLS

Vapor Monitoring

Organic vapors anticipated at the Site during the excavation and drilling work includes LFG and methane vapors. LFG can be emitted into the atmosphere and/or migrate through soil in areas surrounding the landfill sites. Methane, a primary component of LFG, is combustible and can be explosive when allowed to accumulate in enclosed areas at concentrations between 5 and 15% by volume in air.

An organic vapor meter (OVA), portable gas detector, or similar will be used to monitor the exclusion zone perimeter for combustible gases, particularly methane, as necessary. The protocol for the OVA usage is summarized below:

- Calibrate the OVA with an approved methane gas prior to commencing work each day (similarly, a methane gas detector may be used for monitoring)

- Slowly walk the exclusion zone perimeter, generally every 30 minutes as necessary (, stopping approximately every 20 feet to allow the reading to stabilize, if necessary;

- Record the time and range of concentrations reported during each walk around the exclusion zone perimeter;

- If a reading of greater than 5 percent is recorded with the OVA, then stop field investigation immediately. Identify the location of the point source(s). If drilling, proceed to evaluate the source of the emissions and to minimize the generation of vapors using dry ice around the borehole to minimize oxygen, or alternatively, the borehole can be covered to stop the flow of gas and to allow any vapors to disperse.

CONTROL METHODS

Site Security

An exclusion zone will be set up and maintained around the work area during working hours. The exclusion zone will typically be approximately 20 feet on all sides of the work area, however, should more space be necessary in the work area, the exclusion zone may be larger. Only authorized personnel will be allowed into the exclusion zone during work hours. The exclusion zones will be marked with delineators and caution tape.

Notices displaying the title of the project, the City of San Diego's project manager name and phone number, and the statement "This assessment is to determine if the landfill poses any potential risks to public health or the environment", will be posted on two plastic 4' x 8' "public notification" signs at the Site. Because the Site is part of a public park, the park will be available to the public when field investigations are being conducted; however, the exclusion zone prevents unauthorized access to restricted areas.

Traffic and Vehicle Control

Due to insurance limitations, unrestricted personnel are not permitted to be within 20 feet of operating equipment. (CFR1910.120).

Vapors

If, during the exclusion zone perimeter walk, a measured vapor reading of 5 percent methane or more is observed, then drilling/investigative activities will stop, and the point source(s) of the vapor will be identified. Measures to reduce vapor emissions will be taken if necessary.

Dust

Dust emissions may occur during drilling activities. If on visual assessment, dust levels are considered to be elevated, then measures will be taken to reduce dust emissions, including water use as dust control. Measures will be taken to attempt to prevent any water run-off into the borings, stormwater or drainage swales, or the waters of Mission Bay.

Noise

Site activities will be restricted to between the hours of 7 am and 7 pm Monday to Friday. Noise levels are not anticipated to be excessive, and no noise control measures are proposed for these activities.

SITE SAFETY MANAGERS

Karen Stackpole, Tessa McRae or Bob Gutzler Phone: 858-571-5500

EMERGENCY PLANNING

In the event of an emergency situation, work at the Site will be stopped until the situation is brought under control. The exclusion zone will be maintained, with only authorized Site workers and emergency services personnel being allowed into the zone.

A fire extinguisher will be available on-site at all times. With the exception of a small fire that would be interpreted to be safely extinguished with the use of a fire extinguisher, no attempt will be made to fight a fire; however, any potentially flammable materials will be moved from the path of the fire, where judged safe.

PUBLIC NOTIFICATION

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